UNITED STATES PATENT AND TRADEMARK OFFICE

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10/686,969	10/16/2003	Charles R. Kellner JR.	MS1-1683US	8087

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LEE & HAYES PLLC
421 W RIVERSIDE AVENUE SUITE 500
SPOKANE, WA 99201

EXAMINER
HASAN, SYED Y

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2003*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 29 and (30 - 36 renumbered)* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 19, 23 - 29 and (30 - 36 renumbered)* is/are rejected.

7)☒ Claim(s) *20 - 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All b)☐ Some * c)☐ None of:

　　　　1.☐ Certified copies of the priority documents have been received.

　　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date *12/08/2003 and 12/22/2003*.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim 29 -35 are objected to because of the following informalities:

Claim 29 has been numbered twice, therefore all the following claims after the

first claim 29 have been renumbered. Therefore previous claims 29 – 35 are

renumbered to claims 30 – 36 respectively.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as
> set forth in section 102 of this title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole would have been obvious
> at the time the invention was made to a person having ordinary skill in the art to which said
> subject matter pertains. Patentability shall not be negatived by the manner in which the invention
> was made.

3.   Claims 1, 16, 25, 31 (renumbered) and 34 (renumbered) are rejected under 35

U.S.C. 103(a) as being unpatentable over Negishi (US 6717891) in view of Ewert

(6004243)

Regarding **claim 1**, Negishi discloses a computer-implemented method for

processing video data comprising:

determining an ideal playback timing associated with the video data (col 3, lines

1 – 8) and

if an actual playback timing of the video data lags the ideal playback timing (col

3, lines 21 – 24) using a smoothing function (col 3, lines 65 – 67 and col 4 lines 1 – 5

illustrates smoothing function) to recover toward the ideal playback timing (col 4, line 6)

However Negishi does not disclose varying a frame rate associated with the

video data

On the other hand, Ewert teaches varying a frame rate associated with the video

data (col 2, lines 65 – 67)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate varying a frame rate associated with the video data as taught by

Ewert in the system of Negishi in order to provide an interactive real time function.

Regarding **claim 16**, Negishi discloses one or more computer-readable

memories containing a computer program that is executable by a processor to perform

the computer-implemented method (col 5, lines 38 – 39)

Claims 25, 31 and 34 are rejected based on claim 1 above.

4.   Claims 2 – 8, 10 – 13, 26, 27, 29, (renumbered 30, 32, 33, 35 and 36) are

rejected under 35 U.S.C. 103(a) as being unpatentable over Negishi (US 6717891) in

view of Ewert (6004243) and further in view of Mukerjee et al (US 2005/0013365) and

still further in view of Robotham et al (US 5627765)

Regarding **claim 2**, Negishi discloses the computer-implemented method,

wherein smoothly varying the frame rate includes controlling the frame rate (col 3, lines

65 – 67 and col 4 lines 1 – 5 illustrates smoothing function)

However Negishi and Ewert do not disclose using a frame-dropping algorithm

that drops frames in the video data in accordance with the smoothing function.

On the other hand Mukerjee et al teaches a frame-dropping algorithm (page 13,

para 0184)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate a frame-dropping algorithm as taught by Mukerjee et al in the

combined system of Negishi and Ewert in order to improve the viewing experience.

The combination of Negishi, Ewert and Mukerjee et al do not disclose a function

that drops frames in the video data in accordance with the smoothing function.

On the other hand, Robotham et al teaches a function that drops frames in the

video data in accordance with the smoothing function (col 5, lines 22 – 25)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate a frame-dropping algorithm as taught by Robotham et al in the

combined system of Negishi, Ewert and Mukerjee et al in order to provide dynamic

elimination of frames from video information being provided.

Regarding **claim 3**, Negishi discloses the computer-implemented method as,

wherein controlling the frame rate includes:

computing a delay by comparing the actual playback timing with the ideal

playback timing (col 3, line 67 and col 4, lines 1 – 2, illustrating error as delay)

if the delay exceeds a threshold value (col 4, line 10, illustrating delay as "error")

determining that the actual playback timing lags the ideal playback timing (col 4, lines

10 – 20 illustrating an effort to correct the situation)

Regarding **claim 4**, Negishi discloses the computer-implemented method,

wherein the threshold value accounts for ordinary system variations (col 4, lines 10 –20,

illustrates threshold value as "specified range")

Regarding **claim 5**, Negishi discloses the computer-implemented method,

wherein the delay is computed by subtracting the ideal playback timing from the actual

playback timing (col 3, line 67 and col 4, lines 1 – 2)

Regarding **claim 6**, Negishi discloses the computer-implemented method,

wherein the smoothing function incorporates the delay as a variable (col 4, lines 10 –

20, illustrates delay as "error" and an attempt at a smoothing function)

Regarding **claim 7**, Negishi discloses the computer-implemented method,

wherein the delay is computed as an average delay that includes an average of the

delay associated with a current frame of the video data and at least a delay associated

with a previous frame (figure 3B, col 7, lines 13 – 19)

Regarding **claim 8**, Negishi discloses the computer-implemented method,

wherein the average delay is an average of delays associated with the current frame

and a plurality of previous frames (figure 3B, col 7, lines 13 – 19)

Regarding **claim 10**, Negishi discloses the computer-implemented method (see

claim 1)

However Negishi, Ewert and Robotham et al do not disclose the frame-dropping

algorithm includes if a current frame is a B-frame, dropping the current frame.

On the other hand hand Mukerjee et al teaches the frame-dropping algorithm

(page 13, para 0184) includes if a current frame is a B-frame, dropping the current

frame (page 8, para 0117)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate the frame-dropping algorithm includes if a current frame is a B-

frame, dropping the current frame as taught by Mukerjee et al in the combined system

of Negishi , Ewert and Robotham et al in order to maintain visual quality.

Regarding **claim 11**, Negishi discloses the computer-implemented method (see

claim 1)

However Negishi, Ewert and Robotham et al do not disclose the frame-dropping

algorithm includes if a current frame is an I-frame, showing the current frame without

further determination.

On the other hand hand Mukerjee et al teaches the frame-dropping algorithm

(page 13, para 0184) includes if a current frame is an I-frame, showing the

current frame without further determination (page 13, para 0182)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate the frame-dropping algorithm includes if a current frame is an I-

frame, showing the current frame without further determination as taught by Mukerjee et

al in the combined system of Negishi, Ewert and Robotham et al in order to maintain

visual quality.

Regarding **claim 12**, Negishi discloses the computer-implemented method (see

claim 1)

However Negishi, Ewert and Robotham et al do not disclose the

frame-dropping algorithm includes if a current frame is a P-frame, processing

the current frame to obtain enough information for processing subsequent frames

before dropping the current frame.

On the other hand hand Mukerjee et al teaches the frame-dropping algorithm

(page 13, para 0184) includes if a current frame is a P-frame, processing

the current frame to obtain enough information for processing subsequent frames

before dropping the current frame (page 13, para 0175)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate the frame-dropping algorithm includes if a current frame is a P-

frame, processing the current frame to obtain enough information for processing

subsequent frames before dropping the current frame as taught by Mukerjee et al in the

combined system of Negishi, Ewert and Robotham et al in order to maintain visual

quality.

Regarding **claim 13**, Negishi discloses the computer-implemented method (see

claim 1) and if the actual playback timing does not lag the ideal playback timing (col 3,

lines 21 – 24)

However Negishi, Ewert and Robotham et al do not disclose the

frame-dropping algorithm and overriding any determination to drop frames

On the other hand hand Mukerjee et al teaches the frame-dropping algorithm

(page 13, para 0184 and overriding any determination to drop frames (page 13, para

0182)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate frame-dropping algorithm and overriding any determination to

drop frames as taught by Mukerjee et al in the combined system of Negishi, Ewert and

Robotham et al in order to maintain visual quality.

Claims 26, 32 and 35 are rejected based on claim 2 above.

Claim 27 is rejected based on claim 3 above.

Claim 29 is rejected based on claim 3 and 6 above.

Claims 30, 33 and 36 are rejected based on claim 6 and 8 above.

5.   Claims 9 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Negishi (US 6717891) in view of Ewert (6004243) and further in view of Mukerjee et al

(US 2005/0013365) and still further in view of Robotham et al (US 5627765) and still

further in view of Brown (US 2003/0210251)

Regarding **claim 9**, Negishi discloses the computer-implemented method (see

claim 1)

However Negishi, Ewert and Robotham et al do not disclose the frame-dropping

algorithm includes a rasterization algorithm.

On the other hand hand Mukerjee et al teaches a frame-dropping algorithm

(page 13, para 0184)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate a frame-dropping algorithm as taught by Mukerjee et al in the

combined system of Negishi, Ewert and Robotham et al in order to improve the viewing

experience.

The combined system of Negishi, Ewert, Mukerjee et al and Robotham et al

does not disclose rasterization algorithm.

On the other hand Brown teaches rasterization algorithm (page 2, para 0019)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate rasterization algorithm as taught by Brown in the combined

system of Negishi, Ewert, Mukerjee et al and Robotham et al in order to smooth out display.

Claim 28 is rejected based on claim 9 above.

6.   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Negishi (US 6717891) in view of Ewert (6004243) and further in view of Dunbar et al (US 2004/0268397)

Regarding **claim 14**, Negishi discloses the computer-implemented method (see claim 1) and the ideal playback timing (col 3, lines 1 – 8)

However Negishi and Ewert do not disclose playback timing is determined from a presentation clock

On the other hand Dunbar et al teaches playback timing is determined from a presentation clock (page 2, para 0009)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate playback timing is determined from a presentation clock as taught by Dunbar et al in the combined system of Negishi and Ewert in order to accurately schedule the playback mode.

7.   Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Negishi (US 6717891) in view of Ewert (US 6004243) and further in view of Dunbar et al (US 2004/0268397) and still further in view of Wang (US 7116743)

Regarding **claim 15**, Negishi discloses the computer-implemented method (see claim 1)

However Negishi and Ewert do not disclose the presentation clock

On the other hand Dunbar et al teaches the presentation clock (page 2, para

0009)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate the presentation clock as taught by Dunbar et al in the

combined system of Negishi and Ewert in order to accurately schedule the playback

mode.

The combination of Negishi, Ewert and Dunbar et al do not disclose a clock that

includes a filter configured to remove noise.

On the other hand Wang teaches a clock that includes a filter configured to

remove noise (col 5, lines 40 – 41)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate a clock that includes a filter configured to remove noise as

taught by Wang in the combined system of Negishi, Ewert and Dunbar et al in order to

effectively produce a clean clock signal.

8.   Claims 17, 19, 23 and 24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Negishi (US 6717891) in view of Tanaka (US 6130987) and further in

view of Zhang et al (US 5635982) and still further in view of Kim et all (US 6219704)

and still further in view of Mukerjee et al (US 2005/0013365)

Regarding **claim 17**, Negishi discloses a computer-implemented method for

managing video data frame rates (see claim1)

However Negishi does not disclose determining delays associated with playback

of frames of video data; calculating an average delay from averaging the delays;

determining an ideal frame rate associated with the frames, calculating a frame skip

factor; and varying the frame rates associated with the playback by applying a

frame-dropping algorithm configured to determine whether to drop a current frame

using the frame skip factor.

On the other hand Tanaka teaches determining delays associated with playback

of frames of video data (col 2, lines 59 – 60)

determining an ideal frame rate associated with the frames (col 6, lines 12 – 15)

and

varying the frame rates associated with the playback to determine whether to

drop a current frame (col 7, lines 7 – 9)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate determining delays associated with playback of frames of video

data; determining an ideal frame rate associated with the frames and varying the frame

rates associated with the playback to determine whether to drop a current frame as

taught by Tanaka in the system of Negishi in order to synchronously play video and

audio data.

The combination of Negishi and Tanaka does not disclose a frame skip factor

On the other hand Zhang et al discloses a frame skip factor (col 4, lines 29 – 31)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate calculating an average delay from averaging the delays as

taught by Zhang et al in the combined system of Negishi and Tanaka in order to

synchronously play video and audio data

The combination of Negishi, Tanaka and Zhang et al does not disclose calculating an average delay from averaging the delays;

On the other hand Kim et al teaches calculating an average delay from averaging the delays

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate calculating an average delay from averaging the delays as taught by Kim et al in the combined system of Negishi, Tanaka and Zhang et al in order to synchronously play video and audio data.

The combination of Negishi, Tanaka, Zhang et al and Kim et al does not disclose a frame-dropping algorithm

On the other hand hand Mukerjee et al teaches a frame-dropping algorithm (page 13, para 0184)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a frame-dropping algorithm as taught by Mukerjee et al in the combined system of Negishi ,Tanaka, Zhang et al and Kim et al in order to improve the viewing experience.

Regarding **claim 19**, Negishi discloses a computer-implemented method (see claim1) and a smoothing function (col 3, lines 65 – 67 and col 4 lines 1 – 5 illustrates smoothing function)

However Negishi,Tanaka and Kim et al does not disclose the frame-dropping algorithm includes an iterative algorithm that varies the frame rates that includes the frame skip factor.

On the other hand Mukerjee et al teaches the frame-dropping algorithm includes an iterative algorithm that varies the frame rates

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the frame-dropping algorithm includes an iterative algorithm that varies the frame rates as taught by Mukerjee et al in the system of Negishi, Tanaka and Kim et al in order to synchronously play video and audio data

The combination of Negishi, Tanaka, Kim et al and Mukerjee et al does not disclose the frame skip factor

On the other hand Zhang et al discloses a frame skip factor (col 4, lines 29 – 31)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate calculating an average delay from averaging the delays as taught by Zhang et al in the combined system of Negishi, Tanaka, Kim et al and Mukerjee et al in order to synchronously play video and audio data

Regarding **claim 23**, Negishi discloses the computer-implemented method, wherein priority is given to the execution of the computer-implemented method to improve the quality associated with the calculated frame rates (col 8, lines 10 –16)

Regarding **claim 24**, Negishi discloses one or more computer-readable memories containing a computer program that is executable by a processor to perform the computer-implemented method (col 5, lines 38 – 39)

9.   Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Negishi (US 6717891) in view of Tanaka (US 6130987) and further in view of Zhang et al (US 5635982) and still further in view of Kim et all (US 6219704) and still further in view of

Mukerjee et al (US 2005/0013365) and still further in view of Maturi et al (US 5960006)

Regarding **claim 18**, Negishi discloses a computer-implemented method (see

claim1)

However Negishi, Tanaka, Kim et al and Mukerjee et al does not disclose the

frame skip factor is calculated with a tolerance factor that accounts for variability in a

system timer.

On the other hand Zhang et al discloses a frame skip factor is calculated with a

tolerance factor that accounts for variability (col 4, lines 29 – 31)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate a frame skip factor is calculated with a tolerance factor that

accounts for variability as taught by Zhang et al in the system of Negishi,Tanaka, Kim

et al and Mukerjee et al in order to synchronously play video and audio data

The combination of Negishi, Tanaka, Kim et al, Mukerjee et al and Zhang et al

does not disclose a system timer

On the other hand Maturi et al teaches a system timer (col 9, line 22)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate a system timer as taught by Maturi et al in the combined

system of Negishi,Tanaka, Kim et al and Mukerjee et al and Zhang et al in order to

synchronously play video and audio data

Allowable Subject Matter

10.   Claims 20, 21 and 22 are objected as being dependent on a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims and amended to overcome the rejection(s)

under 35 U.S.C. 103 set forth in this Office action.

Regarding **claim 20**, the prior art of record fails to teach, disclose or fairly

suggest as recited in claim 20, the prior art fails to disclose The computer-implemented

method as recited in claim 17, wherein the frame-dropping algorithm includes:

if the frame skip factor is greater than the ideal frame rate, adding the ideal frame

rate to an iterator; and

if the iterator is greater than or equal to the frame skip factor, subtracting the

frame skip factor from the iterator and showing the current frame.

Regarding **claim 21**, the prior art of record fails to teach, disclose or fairly

suggest as recited in claim 21, the prior art fails to disclose The computer-implemented

method as recited in claim 20, wherein the frame-dropping algorithm includes if the

iterator is less than the frame skip factor, dropping the current frame.

Regarding **claim 22**, the prior art of record fails to teach, disclose or fairly

suggest as recited in claim 22, the prior art fails to disclose The computer-implemented

method as recited in claim 21, wherein the frame-dropping algorithm includes:

if the iterator is less than the frame skip factor, determining whether the average

delay has reached a significant percentage of a maximum delay; and

if so, showing the next I-frame subsequent to the current frame.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure

Kehlet et al (US 6831653) discloses a graphics pixel packing for improved fill rate performance

Duruoz et al (US 6654539) discloses a trick playback digital video data.

Laksonso et al (US 6297852) discloses a video display method and apparatus with synchronized video playback and weighed frame creation.
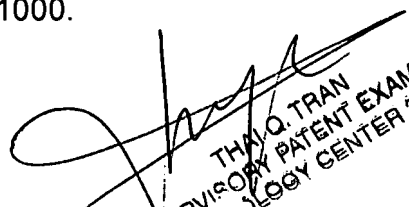
Webster III (US 5053761) discloses a method for smooth bitmap scrolling.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed Y. Hasan whose telephone number is 571-270-1082. The examiner can normally be reached on 9/8/5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thai Tran can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S.Y.H.
07/03/2007

THAI Q. TRAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600